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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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### Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Lakkis, Ismail
Group Art Unit	2634
Examiner Name	To Be Assigned
Attorney Docket Number	45389.00011.CIP

### U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
CF	AD	5,563,909		Nakazawa	10-08-1996	
CF	AE	5,675,572		Hidejima et al.	10-07-1997	
CF	AF	5,949,813		Hunsinger et al.	10-07-1999	
CF	AG	6,049,707		Buer et al.	04-11-2000	
CF	AH	6,192,068 B1		Fattouche et al.	02-20-2001	
CF	AI	6,320,897 B1		Fattouche et al.	11-20-2001	
CF	AJ	6,748,025 B1		Hickling	06-08-20004	
CF	AK	6,765,517 B1		Ali	07-20-2004	
CF	AL	RE37,802 E		Fattouche et al.	07-23-2002	

### FOREIGN PATENT DOCUMENTS

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		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				

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CF	AM	BINGHAM, JOHN A.C. "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come" IEEE Communications Magazine, May 1990, Pages 5-14.	
CF	AN	BLUM, RICK S. et al. "Improved Space – Time Coding for MIMO-OFDM Wireless Communications" IEEE Transactions on Communications, Vol. 49, No. 11, November 2001, pp. 1873-1878.	
CF	AO	CHAUNG, JUSTIN et al. "Beyond 3G: Wideband Wireless Data Access Based on OFDM and Dynamic Packet Assignment" IEEE Communications Magazine, July 2000, pages 78-87.	
CF	AP	EDFORS, OVE et al. "An introduction to orthogonal frequency-division multiplexing" September 1996, pp. 1-50	

Examiner Signature	<i>Chet M - T</i>	Date Considered	<i>9/4/08</i>
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Attorney Docket Number	45389.00011.CIP1

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OF	AQ	FLEMING, ROBERT et al. "CMOS Ultra-Wideband Localizers for Networking in the Extreme, September 10, 2001, pp. 1-28.	
CF	AR	FOERSTER, JEFF et al. "Intel CFP Presentation for UWB PHY" IEEE P802.15 Working Group for Wireless Personal Area Networks, IEEE 802.15-03/109, March 03, 2003, pp. 1-53.	
CF	AS	KELLY, JOY "Multi-band OFDM Physical Layer Proposal Update" IEEE P802.15 Working Group for Wireless Personal Area Networks, IEEE 802.15-04/0122r4, March 15, 2004, pp. 1-26.	
OF	AT	LEEPER, DAVID G. "Wireless Data Blaster: Radio's oldest technology is providing a new way for portable electronics to transmit large quantities of data rapidly without wires" Scientific American, May 2002, Pages 64-69.	
OF	AU	LE MARTRET, CHRISTOPHER J. et al. "All Digital Impulse Radio with Multiuser Detection for Wireless Cellular Systems" IEEE Transactions on Communications, Vol. 50, No. 9, September 2002, pp. 1440-1450.	
OF	AV	PATTAN, BRUNO "A Brief Exposure to Ultra-Wideband Signaling" Microwave Journal, December 2003, pages 1-5.	
OF	AW	O'DONNELL, IAN et al. "An Integrated, Low-Power, Ultra-Wideband Transceiver Architecture for Low-Rate Indoor Wireless Systems" IEEE CAS Workshop on Wireless Communications and Networking, September 4-5th, 2002; Pages 1-23.	
CF	AX	VANDANAMEELE, PATRICK et al. "A Combined OFDM/SDMS Approach" IEEE Journal on Selected Areas in Communications, November 2000, pp. 1-27.	
OF	AY	WONG, CHEONG YUI et al. "Multiuser OFDM with Adaptive Subcarrier, BIT, and Power Allocation" IEEE Journal on Selected Areas in Communications, Vol. 17, No. 10, October 1999, pp. 1747-1758.	
CF	AZ	YE, ZHONG et al. "Throughput Analysis for a Packet Radio Network Using Rate Adaptive OFDM Signaling" IEEE International Conference on Communications, June 1999, pp. 1-7.	

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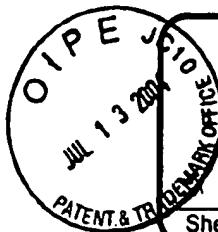
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<i>JY</i>	AB	ALAMOUTI, Siavash M., "A Simple Transmit Diversity Technique for Wireless Communications" <i>IEEE Journal on Select Areas in Communications</i> , Vol. 16, No. 8, October 1998.	
<i>JF</i>	AC	WORNELL, Gregory W. and Mitchell D. Trott, "Efficient Signal Processing Techniques for Exploiting Transmit Antenna Diversity on Fading Channels" <i>IEEE Transactions on Signal Processing</i> , Vol. 45, No. 1, January 1997.	

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